Global Trends

Deep Science

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Executive Summary

For decades, the European Union (EU) has lagged behind the United States (US) in critical areas of economic and technological development. This lag is not just a statistical artifact—it is a profound structural issue with significant implications for the EU's future. One of the most glaring problems is the EU's weakness in "Deep Science," which includes disruptive innovation in advanced materials, nanotechnology, industrial biotechnology, and photonics. These areas are not just scientific curiosities; they are the bedrock of Europe's competitiveness today. Unfortunately, while the EU excels in producing world-class research, it falters in turning these discoveries into market-ready products—a phase we call value realization.

The Innovation Bottleneck: Where the EU Stumbles

1. **From Discovery to Market**: The EU's talent and research output are impressive. Europe churns out a substantial number of academic papers and patents. But when it comes to converting these scientific breakthroughs into commercial products, the EU lags significantly behind the US. This transition phase, the value realization stage, is where the EU's innovation ecosystem breaks down.
2. **Inadequate Funding Mechanisms**: The core of the problem is money—or rather, the lack of it. While the US has a robust system of venture capital (VC) and private equity (PE) investment driving innovation, the EU's funding ecosystem is underdeveloped. In particular, the concept of Science Equity (SE), which funds early-stage innovations, is far less prevalent in Europe. This lack of funding stifles startups and impedes the commercialization of research.

Policy Debate: What Needs to Change

To bridge this innovation gap, the EU needs to rethink its policy approach. Here are some key strategies:

1. **Boost Public and Private Investment**: The EU must ramp up investments in early-stage deep science. Programs like Horizon Europe and the European Innovation Council (EIC) are steps in the right direction but are currently too small and risk-averse. European authorities need to adopt a bolder market-friendly stance, supporting deep-tech ventures from their inception to market entry.
2. **Strengthen Capital Markets**: Enhancing the Capital Markets Union (CMU) is essential to provide better liquidity and exit options for investors, particularly institutional investors. This would make the EU more attractive for venture capital, which is crucial for scaling innovations.
3. **National Efforts and Coordination**: Countries such as Spain, Germany, France, and Sweden have their own national programs supporting deep science. These efforts should be better integrated with EU-wide initiatives to create a cohesive innovation ecosystem.

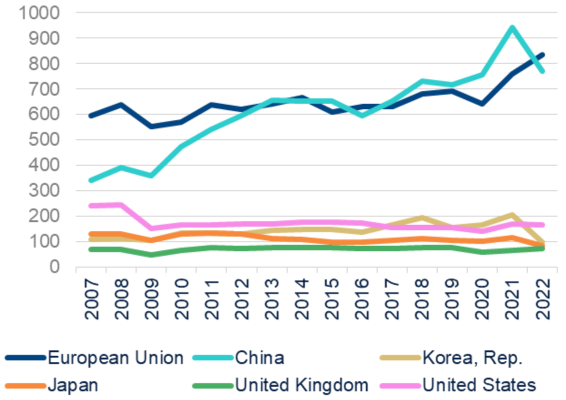
1: BBVA Research.
2: BeAble Capital.

The EU's aspirations for sustainability, competitiveness, and resilience hinge on its ability to close the innovation gap with the US. This requires a dual approach: significantly increasing targeted public funding and creating a more inviting environment for private investment. While initiatives like Horizon Europe and the EIC are promising, they must be expanded and better coordinated with national efforts. By doing so, the EU can transform its scientific prowess into economic strength, ensuring a vibrant and sustainable future for all its member states.

High-tech manufacturing: bedrock of Europe's competitiveness

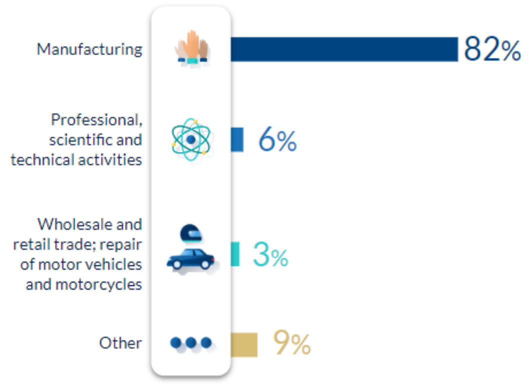
The European Union has long been a dominant force in the global trade of manufactured goods, particularly excelling as the largest exporter of high-tech products in the world. However, this landscape is changing rapidly. China has not only closed the gap but is now surging ahead in this domain as in so many others (Figure 1). This shift underscores a critical challenge for Europe: to maintain its competitive edge, it must bolster its focus on "Deep Science."

Figure 1. **EXPORTS IN HIGH TECHNOLOGY MANUFACTURING (IN BILLIONS, CURRENT USD)**



Source: BBVA Research and BeAble based on World Bank dataset

Figure 2. **DEEP SCIENCE PATENTS: STRUCTURE BY NACE SECTOR (%)**



Source: BBVA Research and BeAble based on OECD Patents Statistics. PCT patent applications based on priority date and by applicant's country of residence, EU and USA data

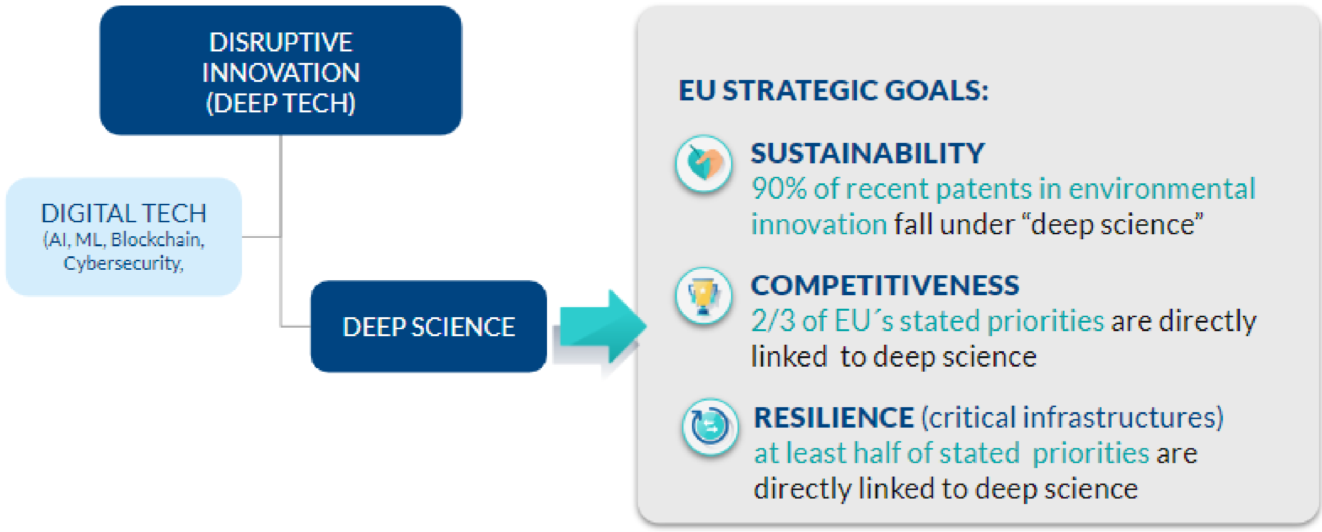
Deep Science encompasses the ecosystem of disruptive innovations in tangible technologies, including advanced materials, nanotechnology, industrial biotechnology, and photonics (Figure 2). In essence, if Europe aims to sustain its leadership, it must ramp up its efforts not only in digital technologies but also in these foundational scientific and technological domains. The crucial question is, how can Europe achieve this?

Deep Science: An Imperative for the EU

Draghi's anticipated report will offer the European Commission a guide to bolster Europe's overall competitive edge. The report will elaborate on what Draghi already described as a critical need: “We are lacking a strategy for how to shield our traditional industries from an unlevel global playing field… We need to be able to rely on domestic manufacturing in the most innovative and fast-growing sectors and secure a leading position in deep-tech and digital innovation that is closely integrated with our manufacturing base.” It will follow in the footsteps of Enrico Letta’s report on the need to reinforce the Single Market, which stated that “Europe faces an urgent imperative to prioritize the establishment of technological foundations that foster knowledge and innovation, by equipping individuals, businesses, and Member States with the necessary skills, infrastructures, and investments.”

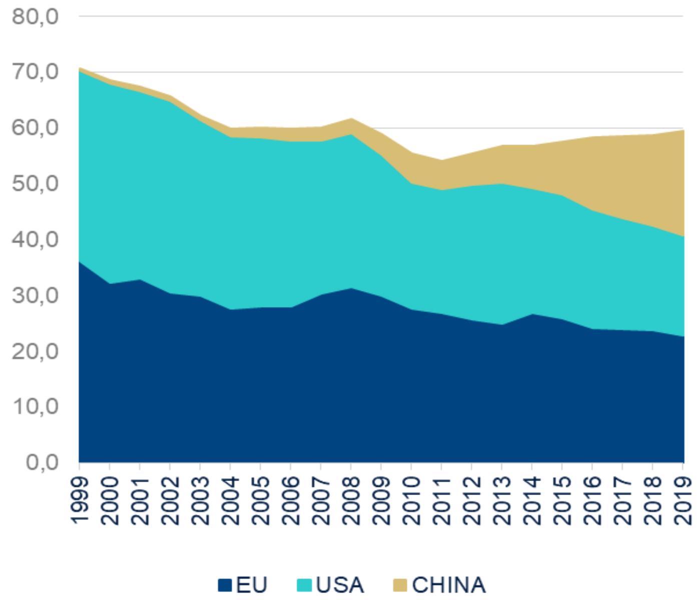
And as important as competitiveness is, it is just one piece of the puzzle. President Ursula von der Leyen has emphasized the urgent need for a comprehensive strategy that includes two other pieces: sustainability and resilience. She argues that the EU must address all three fronts simultaneously, and Deep Science is crucial in all of them (Figure 3). For resilience, securing the EU's critical infrastructure goes hand in hand with keeping physical infrastructure at the forefront of innovative technologies. Regarding sustainability, it's worth noting that 90% of recent patents in environmental innovation fall under the category of Deep Science (Figure 4).

Figure 3. **DEFINITION OF DEEP SCIENCE**



Source: BBVA Research and BeAble

Figure 4. **ENVIRONMENT PATENTS (PCT): EU, USA AND CHINA** (% WORLD ENVIRONMENT PATENTS)



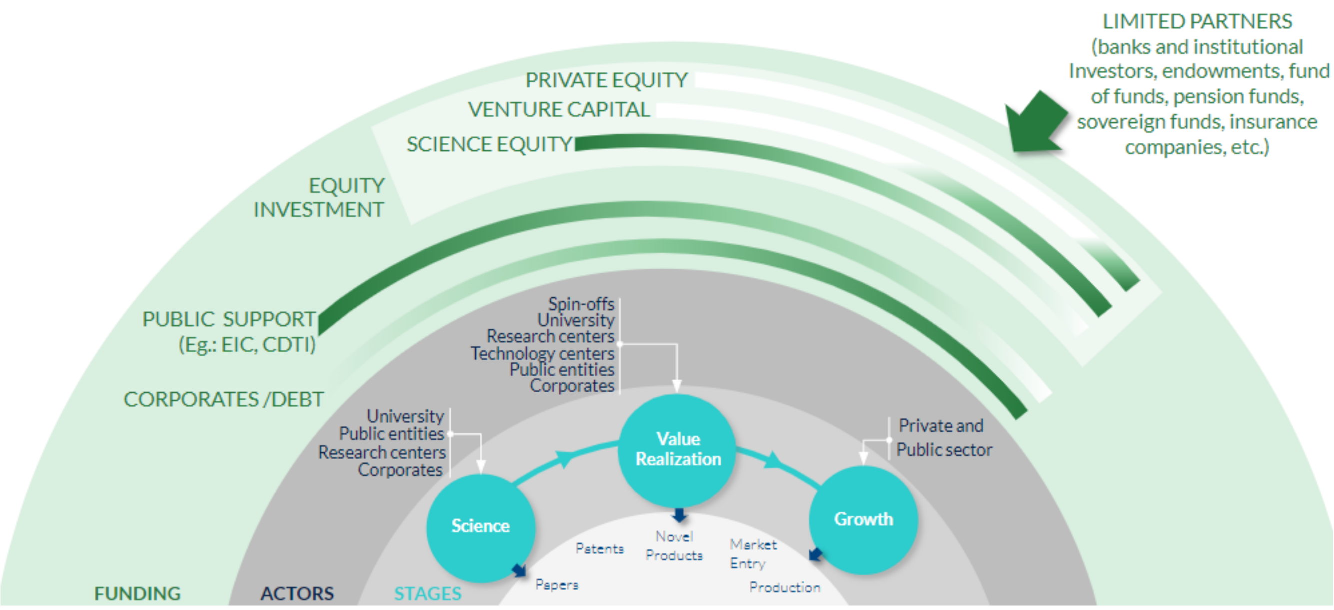
Source: BBVA Research and BeAble Capital from Patents Statistics. PCT patents based on priority date and applicant's country of residence.

Europe has already taken important steps. The Horizon Europe program, launched in 2021 with a budget of €95.5 billion, is a cornerstone of the EU's innovation strategy. It aims to drive scientific excellence, address global challenges, and foster competitiveness by supporting startups, SMEs, and large enterprises in developing groundbreaking technologies. Within this Horizon Europe umbrella, the European Research Council (ERC), with a budget of €16 billion, focuses on advancing frontier research and scientific breakthroughs, while the European Innovation Council (EIC) Fund, with a budget of €10 billion, is dedicated to scaling up innovative startups and SMEs. This European initiative collaborates with national agencies, pooling additional resources to bolster funding efforts.

Science Equity: A Critical Opportunity for Funding Deep Science

Deep Science´s complex process of transforming scientific innovation into market-ready products can be understood through three critical stages: science, value realization, and growth (Figure 5). The science stage involves foundational research conducted by universities, research centers, and public entities, producing new knowledge and technological advancements. This phase is characterized by the generation of academic papers and patents, laying the groundwork for further development. Next, value realization is where this scientific knowledge is transferred into a prototype, it is scaled from laboratory to pilot plant and pre-industrial plant, a "market-ready product" is available ready to start working with industries in pilot projects and sales of less than 1 million euros. Finally, the "growth stage" phase mainly consists of scaling sales, moving to a large industrial production plant and company expansion.

Figure 5. **STAGES, ACTORS AND FUNDING ECOSYSTEM**

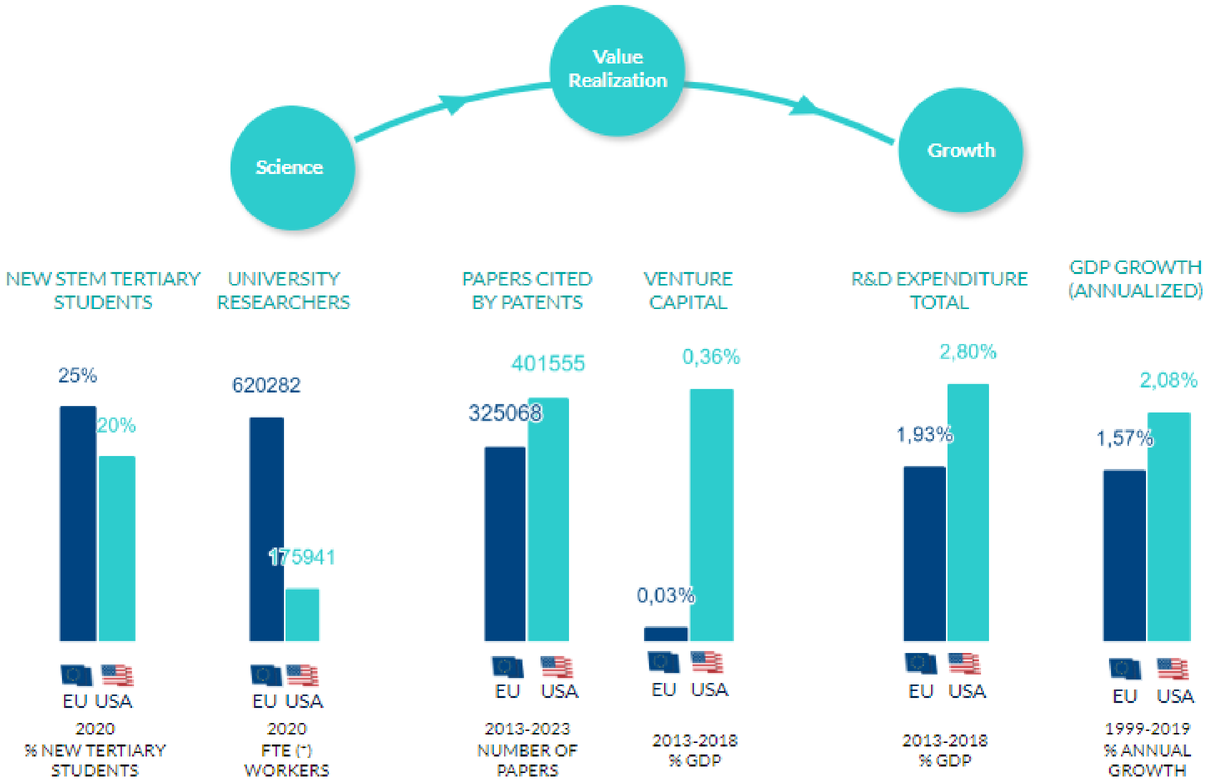


Source: BBVA Research and BeAble

Of the three stages, it is the value realization stage where the EU falters. Figure 6 highlights the EU's robust position in the first stage, excelling in scientific research compared to the US. This success is supported by a vast pool of EU talent, bolstered by a larger influx of students entering STEM fields after high school and a greater number of university researchers. However, the transition from scientific discovery to practical application—the value realization stage—lags significantly behind. Despite the production of a reasonably high number of papers directly relevant to deep science innovation, this stage sees far fewer startups and extremely limited private capital funding, both of which are crucial for transforming research into viable products. The underfunding of this critical stage is also reflected in the EU's lower number of researchers in the private sector compared to the US.

Figure 6 further suggests how this weak ecosystem of value realization acts as a potentially important stumbling block for economic growth. Over the last three decades, the EU's economy has consistently grown at half a percentage point below the US. In 1995, the GDP of the EU and the US were similar, but by 2023, the US economy was already 50% larger. This is not to say that early-stage public funding in strong research is not essential, but rather that it must be complemented by strong, business-savvy investments in value realization to be effective. The data underscores the necessity for a more integrated funding ecosystem to support the commercialization and growth of deep science innovations.

Figure 6. **KEY FIGURES: FROM TALENT TO GROWTH** (EU vs USA)



Source: BBVA Research and BeAble from OECD data.
(*) FTE: Full time equivalent

There are four significant funding channels for the value realization phase: equity investment, debt financing, grants, and non-institutional investment.

1. **Equity Investment**: This channel involves the provision of capital in exchange for ownership stakes. Equity investment is the more natural mechanism to incentivize private agents to participate, as it aligns their interests with the success of the company. It is a critical source of funding for companies at various stages of development, helping them scale operations and bring innovations to market.
2. **Grants**: Public institutions allocate resources through grants to support foundational research and early-stage innovation. Grants are crucial for initial research and development, offering non-dilutive funding. However, their scale is often smaller compared to equity investments, and they are less directly connected to market dynamics, limiting their impact on later-stage commercialization.
3. **Non-Institutional Investment**: This encompasses funding from individual investors, angel investors, and crowdfunding platforms. These sources can be relevant for early-stage startups that may not yet attract institutional investors. In digital tech, non-institutional investments often provide flexible and rapid funding, filling gaps that larger, more structured funding channels might miss. However, deep science attracts short one-off amounts from such investors and more importantly, this type of investment requires scientific knowledge that non-institutional investors usually lack.

4. **Debt Financing**: This involves borrowing funds that must be repaid with interest. This funding can come from traditional banks, government loan programs, or specialized lenders focusing on innovation-driven enterprises, providing an alternative to equity financing without diluting ownership. But debt financing is often less optimal for the early stages of high-risk innovations. Until the company reaches break-even (sales income is equal to its expenses), debt finance does not usually come into force.

In the US, equity investment is the cornerstone of innovation funding, highlighting a significant gap that the EU must address to remain competitive. To understand this gap, it is helpful to identify three types of equity investors that work as if they were runners in a relay race, passing the baton from the earliest to the final stages in the value creation process.

Starting from the end, you observe private equity accompanying projects to the finish line. Private equity steps in to take a market-ready product and expand it significantly, providing the necessary capital for scaling operations, strategic acquisitions, and consolidating market positions.

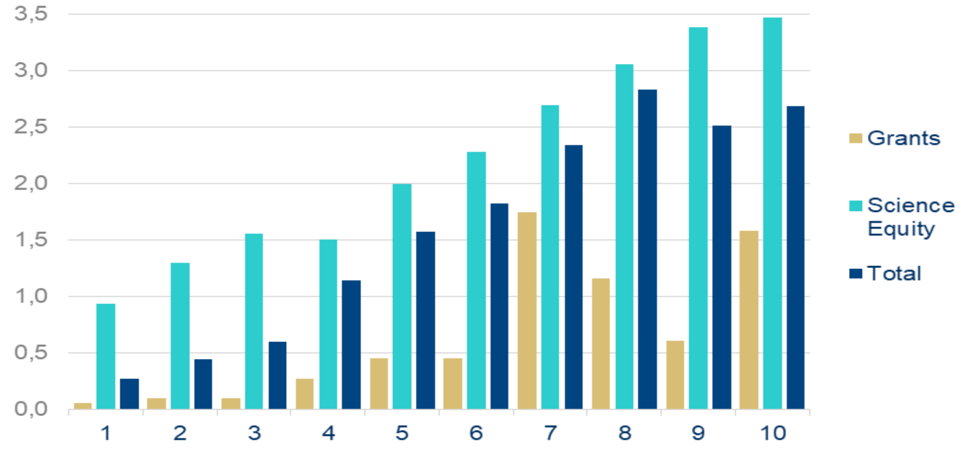
But the baton of a market-ready product is given to private equity by venture capital (who many times runs along private equity to the finish line). Venture capitalists step in to increase sales, the commercial team and the industrial plant, thus strengthening the company, while the market entry and the first scale up, going from the laboratory to a pilot and a pre-industrial plant, is done with Science equity.

However, contrary to digital innovations, where concepts can often be validated quickly and at a lower cost, Deep Science requires an even earlier phase of funding to reach and validate a concept idea. This runner who starts the Deep Science relay in the value creation ecosystem is known as Science Equity. Science equity investors focus on nascent technologies emerging from universities, research centers, and public institutions. They provide crucial funding during the value realization phase, bridging the gap between basic research and economic growth.

Science equity investors play a vital role in nurturing innovative ideas, enabling them to progress from conceptual stages to tangible products. This stage of Deep Science is characterized by high technological and market risks. It also requires longer time horizons than those observed for digital innovations. This makes it a very specialized endeavor for traditional venture capitalists, making Science Equity a distinct and indispensable actor in the funding ecosystem of Deep Science.

Complementing Science Equity, a robust grant ecosystem has also proven crucial to bolster early-stage European innovation in Deep Science. But as shown in Figure 7, it is Science Equity that allocates larger one-off amounts to the average enterprise, since they are professional investors who have the needed knowledge to invest in these types of companies. This allows them to focus their efforts on the early stages of the project rather than managing recurring funding needs. That is why EU authorities created the European Innovation Council (EIC) to partner directly and in sync with private actors in the Deep Science equity market. This collaborative approach involves co-investment strategies where public funds are used alongside private capital to support high-risk, high-reward projects. This not only leverages the strengths of both public and private sectors but also helps mitigate the risks associated with early-stage investments. By doing so, the EU aims to create a more seamless and integrated funding ecosystem that can effectively support the commercialization and growth of deep science innovations.

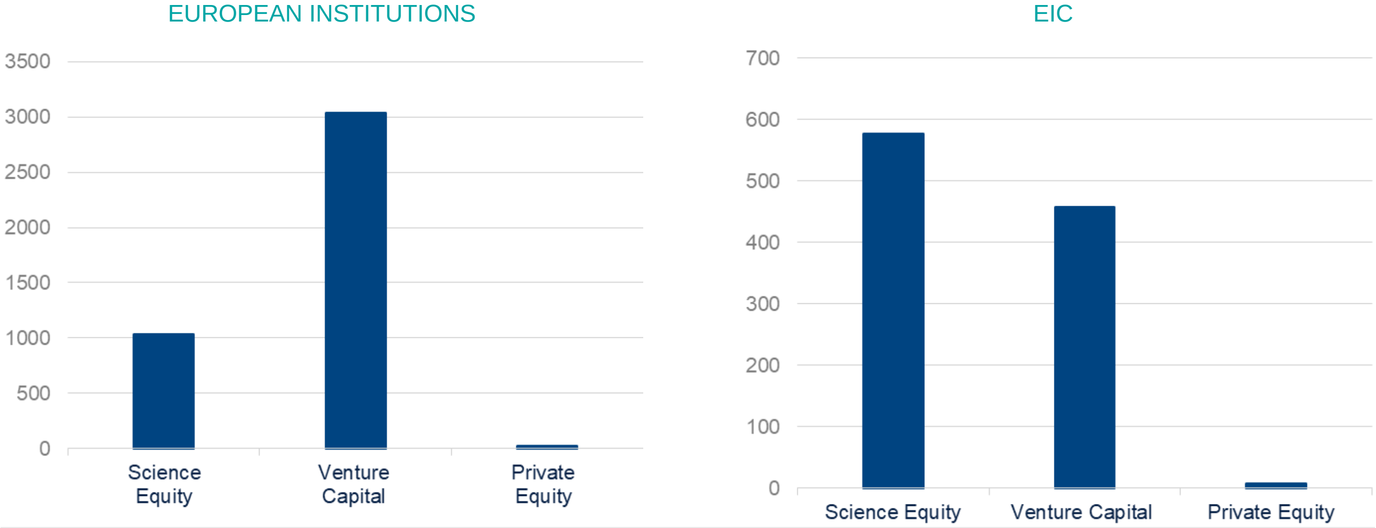
Figure 7. **MEDIAN FUNDING RAISED BY EU DEEP SCIENCE STARTUPS IN FIRST TEN FUNDING ROUNDS** (MILLION DOLLARS, 2012-2022)



Source: BBVA Research and BeAble with data from PitchBook Data, Inc.***

The EIC is succeeding as a risk taker bridging the funding gap at the early stages of breakthrough European innovations while crowding in other investors. It has effectively steered equity investments from EU-level institutions to high-risk Science Equity (Figure 8), investing in a portfolio of companies that have attracted follow-on investments of around € 10 bn (3X EIC´s support to date).

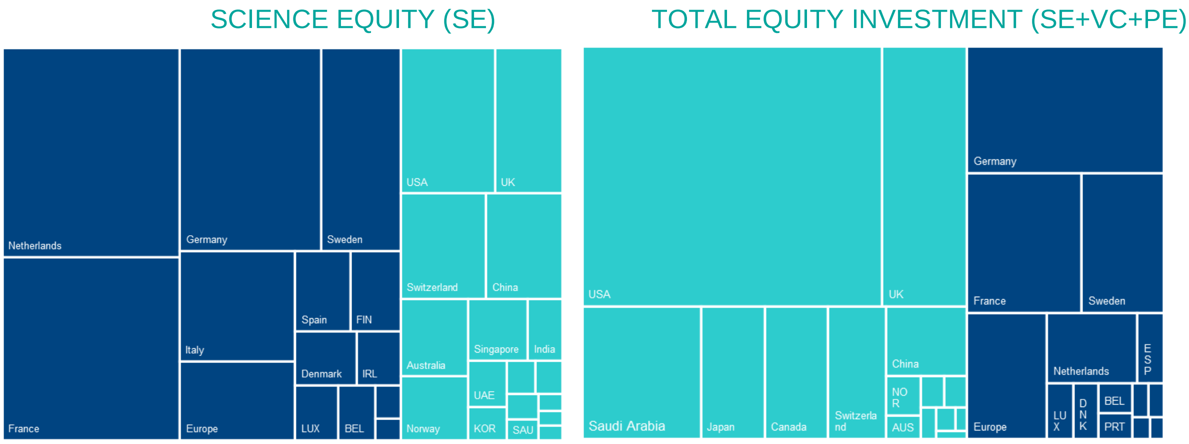
Figure 8. **EU DEEP SCIENCE BY TYPE OF EQUITY INVESTMENT (MILLION DOLLARS) AT EU-LEVEL PUBLIC INSTITUTIONS** (left) **AND EIC FUND** (right), 2012-2022



Source: BBVA Research and BeAble with data from PitchBook Data, Inc.***

Despite the abundance of global capital driving innovation, public support for Europe's Science Equity remains essential. This necessity stems from the asymmetric information that both domestic and foreign investors face during the nascent stages of Deep Science. As depicted in Figure 9, there is a clear hesitance from global capital to engage in Science Equity, primarily due to the crucial need for hands-on 'local knowledge' during the initial innovation stages. Combine this with the absence of a European capital market as sophisticated as that in the US, and it's evident that the EU requires active public participation to match US efforts. Such involvement, together with the strengthening of capital markets, can bridge the gap between early-stage innovations and the necessary funding, ensuring that promising scientific advancements reach commercialization and drive economic growth.

Figure 9. **EU ECOSYSTEM OF EQUITY INVESTORS IN DEEP SCIENCE** (TOP 200 DEALS, WEIGHTED BY DEAL SIZE, 2012-2022)



Source: BBVA Research and BeAble with data from PitchBook Data, Inc.***

Policy Actions for Europe: A Discussion

Innovation Funding: EU vs USA

The EU is losing ground in the global race for promising technologies. When it comes to R&D expenditure in growth sectors such as biotechnology or the digital economy, the US is far ahead. The EU not only invests less than the US in R&D, but innovation is highly concentrated in the automotive industry and other mid-tech sectors, with less growth potential and breakthroughs than innovations within higher-tech industries.

The European goal of spending at least 3% of GDP on R&D is being missed by a wide margin. This ratio is around 2% - lower than in the US or China. While it is true that government-funded R&D in Europe (national and European governments) is comparable to that in the US, at around 0.7% of GDP in both cases. Most of the public-sector support for R&D in the EU originates at the national level, around 90%, while the EU contributes through the Horizon Europe programme, which earmarks about €11-12 billion per year to support broadly-defined innovation, research and development. However, less than 5% of Horizon Europe finances disruptive innovation (€0,5-0,6 billion per year). The difference in private investment on R&D is also significant. While in the US it amounts to 2.3% of GDP, in Europe it barely reaches 1.2% of GDP – a significant lack of financing for turning ideas into value, especially regarding disruptive innovation.

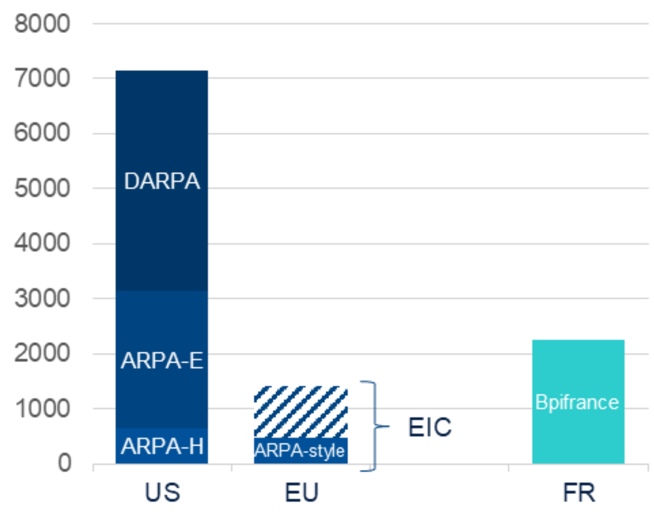
One of the main reasons for the disruptive innovation funding gap is the greater focus on high-tech industries in the US, while Europe is largely concentrated in medium-tech sectors, such as automobiles. These latter sectors usually incorporate technological advances in their production processes, but generally require less R&D intensity and have lower potential growth than high-tech industries.

The establishment of the European Innovation Council (EIC) in 2021 marks a positive shift in reorienting European innovation efforts. The EIC has been established to identify, develop and scale up disruptives technologies and companies, which are critical for European policies to achieve the green and digital transition and help ensure future open strategic autonomy in key technologies. However, the EIC presents some limitations: it is heavily dependent on the European Commission and only marginally focused on disruptive innovation.

The EIC oversees three funding schemes: Pathfinder, Transition and Accelerator. The first two fund low-TRL[3] projects, typical of the ARPA (Advanced Research Project Agencies) model, meaning that at most €470 million of the EIC budget, about a third of the total, is managed similarly to the typical ARPA, a very low quantity compared to the annual ARPA's budget, which exceeds $7 billion (see Figure 10). The other half of the EIC budget is concentrated in the Accelerator programme, which finances projects close to commercialization, with a high TRL. Instead, ARPA typically focuses on developing 'proof-of-concept' or projects up to TRLs 3-4 at most. Once projects reach a sufficient maturity, usually taken to be the demonstration stage (TRL 5 or above), they leave ARPA with the expectation that private capital will flow and scale them up.

The EIC should give the EU an innovation engine similar to the American ARPAs. This would foster incentives, attract private investment, and stimulate the growth of high-tech industries, thereby enhancing the EU's competitiveness and global standing. In fact, one of the main objectives of the EIC strategy is to attract investment of between €30 billion and €50 billion into European deep technology in order to close the financing gap faced by deep-tech companies and leverage the EIC Fund to influence the allocation of private assets in their support. But to do this, the EIC must take risks and support promising deep tech opportunities from the earliest stage to commercial scale-up.

Figure 10. **DISRUPTIVE INNOVATION FUNDING. EU vs US.** Million € for the EU and France (FR) and million $ for the US



Source: BBVA Research from US statistics, 2023 Budget, EU Innovation Policy.and Bpifrance.

3: TRL (Technology Readiness Level) is a scale used to measure the maturity level of a technology. It was originally developed by NASA (1970) and has been widely adopted across various industries and organizations, including defense, energy, and the European Commission. The scale ranges from TRL 1 (observation and reporting of basic principles) to TRL 9 (system proven and successful in actual missions or operations), with each level describing a specific stage of technological development. This system allows developers, investors, and decision-makers to evaluate and communicate the development status of a technology in a consistent manner. For more detail see TRLs-NASA.

Public support for innovation can also be found at the national Level. In Spain, the Center for Technological Development and Innovation (CDTI) plans to grant partially reimbursable aid (700 million euros in R&D projects and 300 million euros in lines of innovation, in 2024) and subsidies for a total amount of 600 million euros. But the CDTI also supports the creation and consolidation of technology-based companies through two lines of action: Neotec –subsidies for new technology-based companies- and Innvierte –risk capital aimed at the consolidation of technological SMEs that, in addition to financing, offers management support, as well as access to international leaders. In the area of risk capital, between 2012 and 2021 Innvierte acquired commitments for 271 million euros which allowed it to leverage a volume of public-private investment in Venture Capital of 1,057 million euros in technology-based companies. In 2022, additional 120 million euros were incorporated to Innvierte thoruth 3 new venture capital funds specialized in technology transfer (seed and start-up phase). In 2024, the governing council of Innvierte has already adopted a battery of measures aimed at expanding the spectrum of society, to facilitate the implementation of new capacities to build capacities in risk capital investment in both direct and indirect operations of at least 125 million euros by 2024.

In Germany, SPRIND is the Federal Agency for Disruptive Innovation tasked with identifying, financing, and scaling groundbreaking innovations. Inspired by the American DARPA, its main goal is to provide agile and proactive support for innovators. The agency, created in 2019, is planned as an experimental phase for a period of ten years, with a budget of 1 billion euros for this ten year-term[4]. Following an analysis and evaluation process, SPRIND has the right to create subsidiaries for projects with promising innovative potential, financed annually by the federal government with between 4 and 15 million euros.

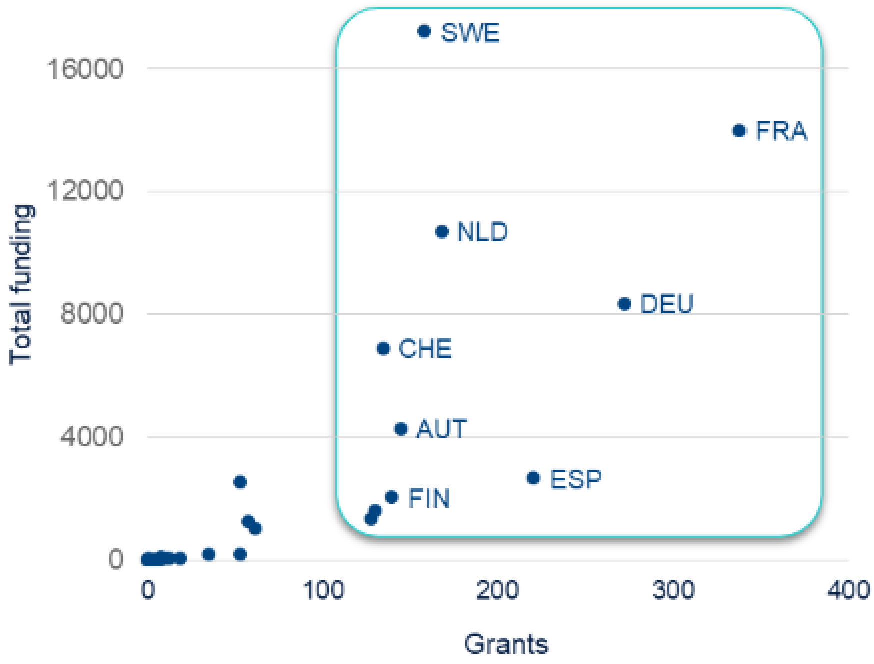
Among the leading European countries in innovation is France. Bpifrance is the French innovation agency, which plays an essential role in promoting growth, employment and innovation, as well as stimulating private investment towards high potential and higher risk projects. In 2022, Bpifrance supported more than 83,000 companies, with around 70% of them being SMEs. Its actions have a double effect: amplifying the impact of public financing and encouraging private investments. In fact, each euro of Bpifrance innovation aid translates on average into 3.4 euros of additional private investment, and each euro of venture capital translates into 5.6 euros of additional investment. Bpifrance investments into innovation capital at a very early stage of maturity (seed and venture capital) amounted to 2.26 billion euros in 2022, a third of the total innovation funding.

Another leading country in R&D is Sweden, one of the world's most innovative countries. In 2022, it ranked first in the European Innovation Scoreboard and third in the Global Innovation Index 2022. Through Vinnova, the Swedeen Innovation Agency[5], it promotes sustainable growth by improving the conditions for innovation and managing state funds for needs-based research. Vinnova has the vision that Sweden will be a world-leading country in R&D and a force for innovation in a sustainable world, and at the same time an attractive place to invest and do business. Vinnova invests approximately 300 million euros annually in R&D in the form of grants. But in Sweden, internal financing represents the largest proportion of financing for companies, about three quarters, with the remaining third coming from external financing or intra group financing, in equal parts[6]. So, in 2023 less than a tenth of firms using external finance received grants (6%), which is well below the EU average (16%).

4: SPRIND.
5: Vinnova.
6: EIB Investment Survey Country Overview 2023-Sweden.

Investment in Deep Science

Figure 11. **GRANTS AND EQUITY FUNDING RAISED BY DEEP SCIENCE.** 2012-2022 (MILLION DOLLARS)



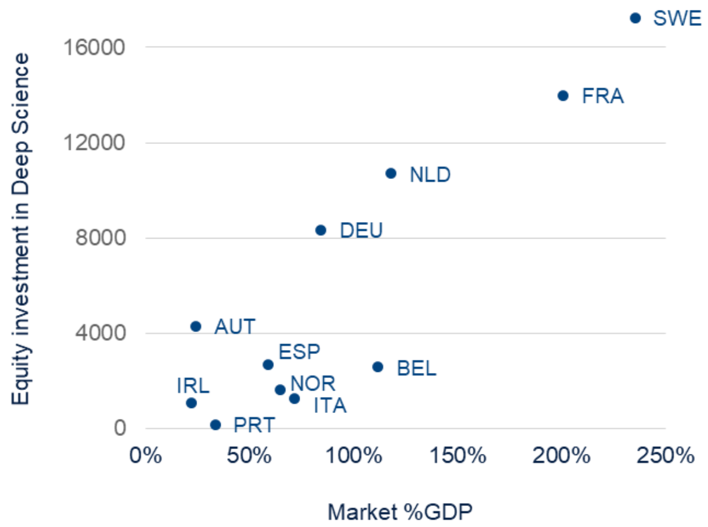
Source: BBVA Research and BeAble with data from PitchBook Data, Inc.***

There is a commendable grant ecosystem intended to support Deep Science at a national and European Union level. But, as shown in Figure 11, there is no significant correlation between grant and overall funding of Deep Science across EU countries. This disconnect highlights the need for better integration and alignment between grant funding and equity investments to ensure that early-stage scientific discoveries can effectively transition into market-ready innovations. To effectively support deep science, the EU must implement strategic policy actions to bolster innovation at its early stages. Such efforts can be grouped into two types: direct public funding and market enhancement of the Science Equity ecosystem. On direct public funding, initiatives like the EIC are proving to be on the right track. Research shows that industries benefit strongly from public support in the early stages of their high-tech innovation projects, support that significantly raises the probability of obtaining patents and securing additional private capital (crowding in). But such an impact loses its significance when supporting more established projects. The leading role that public actors can play in the early stages of the entrepreneurial ecosystem is conferred by their readiness and capability to take on significant risks, and signal support for such ideas irrespective of the business cycle.

But direct funding is not enough. Designing regulations and tax structures that promote robust and sustainable private funding is vital. Learning from the US experience, where policy changes have encouraged institutional investors to diversify into venture capital funds, the EU does good in advancing the Capital Markets Union (CMU). This will improve liquidity and exit possibilities for venture capital investors, supporting early and growth-stage financing in Europe. Additional (de)regulation that further increases the range of investors participating in Science

Equity shall also be actively considered. Contrary to what we observed about grants in an earlier chart, the size of a country's overall capital market is a very significant indicator of the amount of funding raised by science equity (Figure 12).

Figure 12.**EQUITY INVESTMENT IN DEEP SCIENCE AND CAPITAL MARKETS CAPITALIZATION.**
(% GDP, MILLION USD; 2023)



Source: BBVA Research and BeAble with data from PitchBook Data, Inc.***

Conclusion

Deep science is integral to achieving the EU's strategic goals of sustainability, competitiveness, and resilience. But the EU is currently trailing behind the US in the Deep Science ecosystem, particularly struggling at the early stages of the value realization phase. Addressing this bottleneck requires a focus on science equity to ensure the benefits of research are fully realized—a feat that can only be achieved by the EU embracing a dual approach of (1) larger targeted public funding and (2) enhancement of capital markets to attract more private investment. Correspondingly, the Horizon Europe program and efforts for a Capital Market Union exemplify that authorities know what needs to be done, but also show that their push remains inadequate relative to what is needed. As the EU moves forward, it must continue to prioritize innovation, unity, and strategic action to secure a prosperous and sustainable future for all its member states.

References

Bpifrance. (2024, February 13). *The impact of Bpifrance's actions in 2022*. https://www.bpifrance.com/2024/02/13/the-impact-of-bpifrances-actions-in-2022/#:~=The%20turnover%20of%20companies%20supported,turnover%20growth%20is%20%2B17%25.

Climate Change Institute. (n.d.). *Daily Surface Air Temperature*. https://climatereanalyzer.org/clim/t2_daily/?dm_id=world.

Co-funded European partnership on raw materials for the green and digital transition. (2024, May). *Strategic Research & Innovation Agenda*. https://www.vinnova.se/globalassets/publikationer/2024/strategic-research_innovation-agenda-sria.pdf?cb=20240626091703.

Dernis, H., & Khan, M. (2004). *Triadic Patent Families Methodology*. OECD Science, Technology and Industry Working Papers, No. 2004/02, OECD Publishing, Paris. https://doi.org/10.1787/443844125004.

European Commission, Directorate-General for Research and Innovation. (2021). *Horizon Europe, budget – Horizon Europe - the most ambitious EU research & innovation programme ever*. Publications Office of the European Union. https://research-and-innovation.ec.europa.eu/knowledge-publications-tools-and-data/publications/all-publications/horizon-europe-factsheets_en.

European Investment Bank. (2024, February 1). *EIB Investment Survey Country Overview 2023 - Sweden*. https://www.eib.org/attachments/lucalli/20230340_econ_eibis_2023_sweden_en.pdf.

Fuest, C., Gros, D., Mengel, P.-L., Presidente, G., & Tirole, J. (2024, April). *EU Innovation Policy – How to Escape the Middle Technology Trap?* EconPol Policy Report. https://www.econpol.eu/publications/policy_report/eu-innovation-policy-how-to-escape-the-middle-technology-trap.

Federal Agency for Disruptive Innovation SPRIND. (n.d.). https://www.sprind.org.

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*** Handling of Pitchbook Dataset has not been reviewed by PitchBook analysts.

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